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# **The Maturity Model concept as framework for assessing the capability of higher education institutions to address student engagement, success and retention: New horizon or false dawn?**

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## **Abstract**

*While the engagement, success and retention of first year students are ongoing issues in higher education, they are currently of considerable and increasing importance as the pressures on teaching and learning from the new standards framework<sup>1</sup> and performance funding intensifies. This Nuts & Bolts presentation introduces the concept of a maturity model and its application to the assessment of the capability of higher education institutions to address student engagement, success and retention. Participants will be provided with (a) a concise description of the concept and features of a maturity model; and (b) the opportunity to explore the potential application of maturity models (i) to the management of student engagement and retention programs and strategies within an institution and (ii) to the improvement of these features by benchmarking across the sector.*

## **Student engagement and institutional capability**

Australian higher education institutions (HEIs) are currently under considerable pressure to widen the participation of traditionally under-represented student groups as a consequence of the government response (Australian Government, 2009) to the Bradley Report (Bradley, Noonan, Nugent, & Scales, 2008). This pressure manifests as indicators of participation and social inclusion which are now performance measures linked to funding. A natural consequence of these developments is increased student diversity, particularly in first year, and the concomitant stress on institutions will be to maintain or increase student engagement, success and retention in the midst of this diversity. To address this, institutions need baseline data that provides some indication of not only student experiences but also the institutional influences on and responses to those experiences.

As far as student experience data is concerned, Australian HEIs have been well served by existing surveys that are used sector-wide, particularly in recent times by the *Australasian Survey of Student Engagement* [AUSSE] (Australian Council for Educational Research [ACER], n.d.). It has been used annually to collect data since 2007 (see ACER, n.d., for links to the annual AUSSE reports and information on other instruments that have been used). At the time of writing, a suite of instruments designed to improve transparency in university performance is being considered by the Department of Industry, Innovation, Science, Research and Tertiary Education.<sup>2</sup> These initiatives include the *University Experience*

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<sup>1</sup> <http://www.teqsa.gov.au/higher-education-threshold-standards>

<sup>2</sup> On 15 December 2011, this Department replaced the Department of Education, Employment and Workplace Relations (DEEWR).

*Survey*, an Australian version of the *Collegiate Learning Assessment* and a strengthened *Australian Graduate Survey* (DEEWR, n.d.).

While these instruments provide both a means to measure and an opportunity to benchmark *student experiences* and *engagement*, there is no comparable instrument to measure the *capability* of institutions to influence and/or respond to student experiences. The question explored here is whether the maturity model concept can be usefully applied to fill that gap by facilitating the development of an instrument that aims (i) to enable institutions to assess the *capability* of their current student engagement and retention programs and strategies to influence and respond to student experiences within the institution; and (ii) to provide institutions with the opportunity to benchmark across the sector with a view to improving those programs and practices. In essence, is it possible to use the maturity model concept to produce an instrument that will indicate the *capability* of HEIs to *manage* and *improve* student engagement, success and retention programs and strategies?

For HEIs operating in the current socio-political environment, it is reasonable to assume that they are organisations that implement a variety of policies and associated processes designed to promote student engagement, success and retention; and that these policies and processes will vary in complexity, quality, explicitness and effectiveness; or, to use terms relevant to maturity model concept to be explored here, will vary in *capability* and *maturity*.

## Capability maturity models

### *Some definitions*

*Capability* is an indication of how well a process used by an organisation does what it is designed to do; while *maturity* is an indication of the collective impact of the capabilities on a given aspect of that organisation (Rosemann & de Bruin, 2005). *Maturity* is normative in the sense that an aspect can be “more” or “less” mature (Iversen, Nielsen & Norbjerg, 1999) and by becoming more mature, an organisation can *improve* or *evolve*. If a *model* is defined as a “theoretical representation that simulates the behaviour or activity of systems, processes or phenomena” (Theoretical model definition, n.d., para 1), then by ordering all of the theoretically possible incremental improvements into a continuum, it is possible to generate a *model* that summarises the maturity of the capabilities for that organization—a *capability maturity model*. This represents a continuum of incremental improvements, evolving from a less to a more mature or effective level. Some commentators suggest that these “increments” can be clustered into stages ... [with a *distinctive*] set of descriptors or benchmark variables ... characteris[ing] each stage ... [and] with each later stage being superior to a previous stage ...” (Becker, Niehaves, Pöppelbuß, & Simons, 2010, p. 2). By way of balance to this global notion of stages, it is important to note that different functional units *within* an organisation could exhibit different levels of maturity with respect to their capacity to deal with a particular issue because the *capabilities* of the strategies used to address this issue may vary among the units.

The particular *capability maturity model*<sup>3</sup> being developed by the authors is the *Student Engagement, Success and Retention-Maturity Model* (SESR-MM). It is used below to provide examples of some of the features of MMs.

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<sup>3</sup> *Capability maturity model* and *maturity model* are both used in the literature. *Maturity model* and acronym *MM* are used henceforth unless referring to a proper name.

### *Components of a maturity model*

An MM has three essential components: content, indicators of maturity status, and an assessment of the quality of the content.

‘Content’ is the most basic component. In the SESR-MM, the content consists of the practices associated with the policies, programs and activities related to SESR.<sup>4</sup> As this is what is going to be assessed by the model, it is important that it be as comprehensive, representative, detailed and specific as possible. Hence, the basic unit of content are specific practices (e.g. Students are provided with written comments as well as marks). For convenience and to facilitate discussion, other specific practices about feedback can be synthesized into a more general *process* (e.g. Students receive feedback on their performance in assessments). This process can then be coalesced with other processes related to assessment such as Types of assessment into a broader *category* (e.g. Assessment).

‘Indicators of maturity status’ is the central component of the model. Indicators are derived from the Total Quality Management (TQM) literature (Clarke, Nelson & Stoodley, 2011; Huggins, 1998) and have between four and six elements with five being the most common (see for example, Figure 5 in Maier, Moultrie & Clarkson, 2009, p. 20). Summarising these characteristics, Marshall concluded that indicators of maturity status

pretty much fall into mainstream management thinking around quality improvement cycles ... It's very mainstream, this idea that you do something, you think about how you plan to achieve that thing, you have standards, you have evaluation of that thing and you have structured improvement of that thing. (eMM Transcript 1, 2011, lines 1256-1265)<sup>5</sup>

The conceptualisation of the indicators varies depending on the type of organisational environment—either (i) relatively rigid, controlled and homogeneous or (ii) more socially and vocationally complex, flexible and variable. In (i), the indicators are interpreted as *levels of maturity*. MMs had their genesis in and continue to have a strong association with the IT industry and this type of environment is typical of software development organizations. An example of this approach is the *Capability Maturity Model* (CMM) (Paulk, 1999). The CMM is a five level framework that describes the key elements of an effective software process as “an evolutionary improvement path from an ad hoc, immature process to a mature, disciplined process” (Paulk, Weber, Garcia, Chrissis, & Bush, 1993, p. 07) and the five elements are a hierarchy of sequential *levels of maturity* where movement from a lower level to the next is evidence of a growing maturity. In (ii) which are the more complex and variable environments, there may be some relatively autonomous sub-groups with, for example, vocationally different orientations and the maturity of the same aspect could vary among these sub-groups. HEIs fit this mode of operation. The five elements are not seen as hierarchical or sequential, but are referred to as *dimensions*, with “... the key idea of holistic capability, ... [which] describes ... capability ... from synergistic perspectives” (Marshall, 2007, p. 6). Maturity is seen as a complex interactive product of all of the dimensions rather than a single global level. Marshall and Mitchell’s *eLearning Maturity Model* (eMM) (Marshall, 2010) is an example where the dimension concept is used.

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<sup>4</sup> Participants will be provided with the list of references used to generate the content for the SESR-MM.

<sup>5</sup> Stephen Marshall and Geoff Mitchell led a training workshop with the authors on November 16, 2011. It was recorded and transcribed as eMM Transcript 1 (2011).

The descriptors for the five elements either as *levels* or *dimensions* are essentially the same but the language is influenced by the content being assessed.<sup>6</sup> It is in their interpretation as sequential hierarchical levels or as synergistic dimensions that they differ.

The third essential component of maturity models focuses on the *quality* of the *content*.

How the ‘quality of the content is assessed’ depends on whether *levels* or *dimensions* are used as indicators of maturity. If *levels* are used, the descriptors associated with the levels are used as indicators of quality. The descriptors will be specific interpretations of the generic versions in the handout (see footnote 5) as they will be describing the specific content being assessed. Each level is matched to key aspects of the content in a matrix or grid called a *Capability Maturity Grid* (see Maier et al., 2009 for a detailed discussion) and the descriptions provide a “behaviourally anchored response scale” (Grant & Pennypacker, 2006, p. 62). When maturity is considered in terms of synergistic dimensions where some indication of quality is required about all five dimensions, Marshall and Mitchell (Marshall, 2010) add an additional step and assess the *quality* of the behaviours associated with each dimension using a four-point *adequacy* scale (Not-, Partially-, Largely- and Fully-adequate).

### Session outline (30 minutes)

#### *Introduction (10 minutes)*

- Introduce the issue: The lack of an instrument to assess the capability of institutions to influence or respond to student engagement, success and retention experiences;
- Introduce a possible solution: Discuss the concept and essential components of an MM.

#### *Individual/small group activity (10 minutes)*

- Participants will be provided with a worksheet with a named SESR *process* and will be asked to generate an example of a *practice* for each *dimension*.

#### *In small groups, choose one of the following questions for discussion (8 minutes)*

Are MMs appropriate:

- to assess the capability of HEIs to address student engagement?
- to manage student engagement programs and strategies *within* an institution? and
- to improve these features by benchmarking across the sector?

#### *Conclusion (2 minutes)*

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<sup>6</sup> Participants will be provided with a tabular summary of the descriptors for the indicators of maturity for the CMM and the eMM.

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